

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/615,708

REMARKS

Claims 12, 14, 16-19, 21 and 24 are all the claims pending in the application.

Claims 14 and 21 are allowed. In the Amendment, claim 12 is amended to recite a thermal cross-linking agent. Claims 16 and 17 depend from claim 12 and thus contain the thermal cross-linking agent by way of their dependency. Claim 15 is canceled and claims 18 and 19 are amended for clarity. Entry of the Amendment and consideration of the following remarks is respectfully requested.

I. The Art Rejections of Claims 12 and 16-18

Claims 12 and 16-17 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Watanabe et al (5,403,908).

Claims 12 and 16-17 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Machida et al '908.

Claims 12 and 16-18 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Machida et al '061.

Claims 12 and 16-17 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Yuki et al (4,473,690) in view of Morrison et al (Organic Chemistry).

As noted, claim 12 has been amended to recite a "thermal cross-linking agent". Claims 16-18 depend directly from claim 12. Support for the term "thermal

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cross-linking agent" in claim 14 may be found in the specification as originally filed, for example, at page 59, lines 9-13.

None of the compositions disclosed in Watanabe et al, Machida et al '908, Machida et al '061 and Yuki et al contain a thermal crosslinking agent. Applicants respectfully submit that none of these citations teaches or discloses Applicants' invention or the effect of the present invention as an antireflective coating layer.

For the above reasons, it is respectfully submitted that the subject matter of claims 12 and 16-18 is neither taught by nor made obvious from the disclosures of Watanabe et al, Machida et al '908, Machida et al '061 and Yuki et al (together with Morrison et al (Organic Chemistry)) and it is requested that the rejections under 35 U.S.C. §§102 and 103 be reconsidered and withdrawn.

Additionally, Applicants request that claim 24 be "rejoined" with claim 12, when allowed. In general, if an applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims (including method of making the product and methods of using the product) which depend from or otherwise include all the limitations of the allowable product claim will be rejoined. See MPEP §821.04.

II. The Rejections of Claim 15

Claim 15 is rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

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Additionally, in paragraph 13 of the Office Action, claim 15 is "objected to" and in paragraph 14 of the Office Action, the Examiner rejects claim 15 based on Mizutani et al.

Claim 15 is canceled. Therefore, the rejections of and objections to claim 15 are moot.

III. Claim 19

In paragraphs 15-19 and 21 of the Office Action, the Examiner rejects and objects to claim 19 for formal matters.

Claim 19 is rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

Additionally, in paragraph 19 of the Office Action, claim 19 is rejected as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that Applicants had possession of the claimed invention at the time the application was filed. In particular, the Examiner states:

On pages 11-12 of the instant specification written description is given for only those polymers in claim 19 that have an organic group having a -CH₂OH, -CH₂OR₄ or -CH₂OCOCH₃ terminal group wherein R₄ represents a hydrocarbon group having from 1-20 carbon atoms. [Embodiment] (10) is described within the limits of [embodiment] (9) on page 11 for A. Other groups of compounds such as those modified by reaction of formalin with other components in a manner that would eat up the above groups such that none remained are not supported by the specification.

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Claim 19 is amended to clarify the language and to more particularly point out and distinctly claim Applicants' invention. The reference to component (b) is deleted and the number of hydrogen atoms of the aromatic groups is corrected. Additionally, the language concerning the substituent that is a group obtained by reaction with formalin has been clarified.

For the above reasons, it is respectfully submitted that Applicants' claims are clear and definite and it is requested that the rejection under 35 U.S.C. §112 be reconsidered and withdrawn.

IV. Conclusion

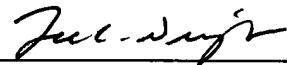
In view of the above, Applicants respectfully submit that their claimed invention is allowable and ask that the rejections under 35 U.S.C. §112, §102 and §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

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Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

Date: June 26, 2003

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

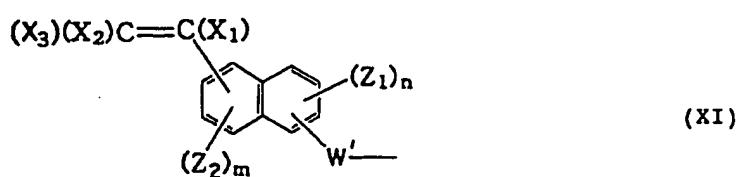
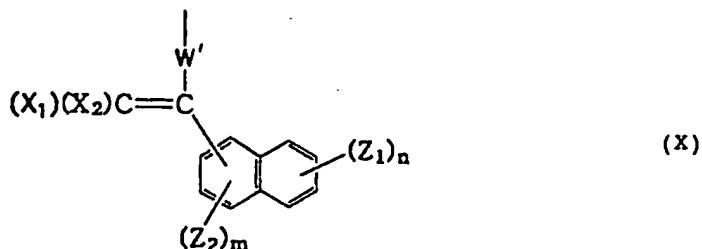
IN THE CLAIMS:

Claim 15 is canceled.

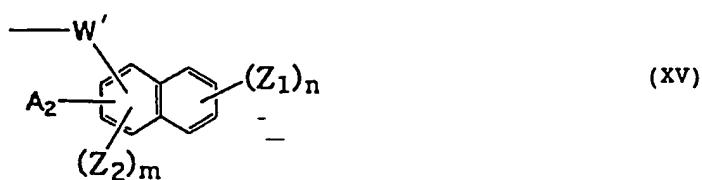
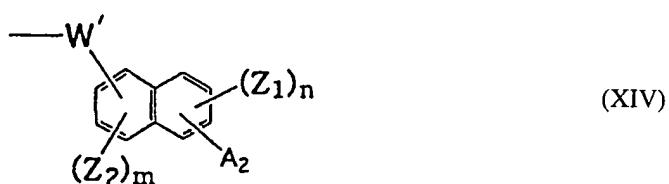
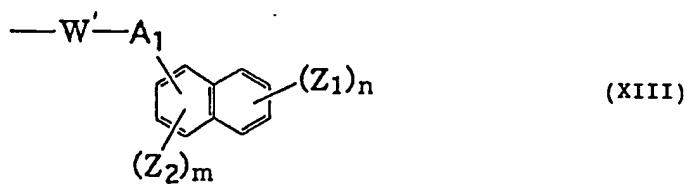
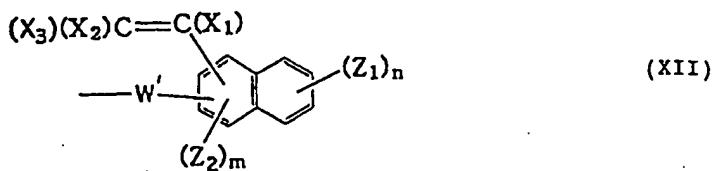
The claims are amended as follows:

12. (Three Times Amended) A bottom anti-reflective coating material composition comprising a polymer light absorbent having at least one group represented by the following formula (X), (XI), (XII), (XIII), (XIV) or (XV) on the side chain and

a thermal cross-linking agent:



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wherein W' represents a divalent linking group, X₁ to X₃, which may be the same or different, each represents a hydrogen atom, a halogen atom, a cyano group or -(X₄)_p-R wherein R represents an alkyl group having from 1 to 20 carbon atoms, an aryl group having from 6 to 20 carbon atoms or an aralkyl group having from 7 to

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20 carbon atoms, which may have a substituent, X₄ represents a single bond, -CO₂-, -CONH-, -O-, -CO-, an alkylene group having from 2 to 4 carbon atoms or -SO₂-, p represents an integer of from 1 to 10, Z₁ and Z₂, which may be the same or different, each represents an electron donating group, m and n represent an integer of from 0 to 2 and from 0 to 3, respectively, and when m is 2 or m and n each is 2 or 3, the Z₁ groups or the Z₂ groups may be the same or different, A₁ represents a divalent aromatic ring or heteroaromatic ring group having from 5 to 14 carbon atoms, which may have a substituent, and A₂ represents an aromatic ring or heteroaromatic ring group having from 5 to 14 carbon atoms, which may have a substituent.

18 (Amended). A bottom anti-reflective coating material composition as claimed in claim 12, wherein said polymer light absorbent contains from 2 to 50 wt% of the repeating structural unit represented by the following formula (XXVII):



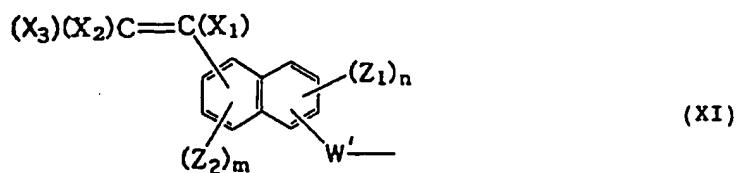
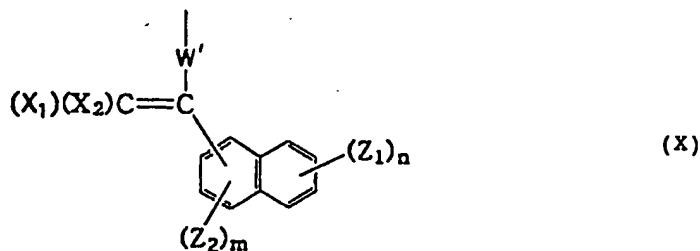
wherein R₂ represents a hydrogen atom, a methyl group, a chlorine atom, a bromine atom or a cyano group, and B₁ represents [an organic] a group [having] containing

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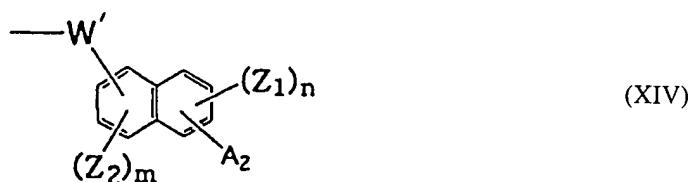
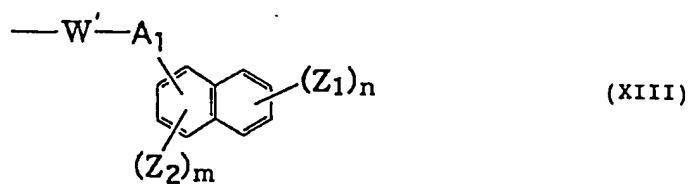
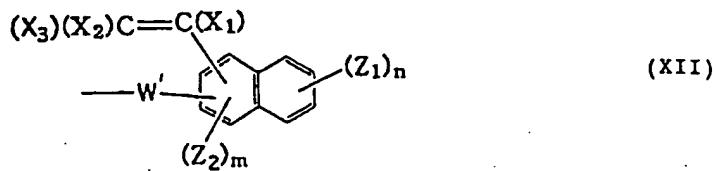
-CH₂OH, -CH₂OR⁷ or -CH₂OCOCH₃ at the terminal wherein R⁷ represents a hydrocarbon group having from 1 to 20 carbon atoms.

19 (Three Times Amended). A bottom anti-reflective coating material composition comprising[the following components (a) and (b):

(a)]a polymer light absorbent having at least one group represented by the following formula (X), (XI), (XII), (XIII), (XIV) or (XV) on the side chain:



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wherein W' represents a divalent linking group, X₁ to X₃, which may be the same or different, each represents a hydrogen atom, a halogen atom, a cyano group or -(X₄)_p-R wherein R represents an alkyl group having from 1 to 20 carbon atoms, an aryl group having from 6 to 20 carbon atoms or an aralkyl group having from 7 to

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20 carbon atoms, which may have a substituent, X_4 represents a single bond, $\text{-CO}_2\text{-}$, -CONH- , -O- , -CO- , an alkylene group having from 2 to 4 carbon atoms or $\text{-SO}_2\text{-}$, p represents an integer of from 1 to 10, Z_1 and Z_2 , which may be the same or different, each represents an electron donating group, m and n represent an integer of from 0 to 2 and from 0 to 3, respectively, and when m is 2 or m and n each is 2 or 3, the Z_1 groups or the Z_2 groups may be the same or different, A_1 represents a divalent aromatic ring or heteroaromatic ring group having from 5 to 14 carbon atoms, which may have a substituent, and A_2 represents an aromatic ring or heteroaromatic ring group having from 5 to 14 carbon atoms, which may have a substituent;

and having from 2 to 50 wt% of a repeating structural unit represented by formula (XXVII):



where R_2 represents a hydrogen atom, a methyl group, a chlorine atom, a bromine atom or a cyano group, and B_1 [is a group obtained by the reaction of a group represented by] represents $\text{-CONHCH}_2\text{OH}$, $\text{-CONHCH}_2\text{OCH}_3$, $\text{-CH}_2\text{OCOCH}_3$, $[-\text{C}_6\text{H}_4(\text{OH})\text{CH}_2\text{OH}]$ $-\text{C}_6\text{H}_3(\text{OH})\text{CH}_2\text{OH}$, $[-\text{C}_6\text{H}_4(\text{OH})\text{CH}_2\text{OCH}_3]$ $-\text{C}_6\text{H}_3(\text{OH})\text{CH}_2\text{OCH}_3$

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or a group obtained by reaction of a group represented by
-CONHC(CH₃)₂CH₂COCH₃[,] with formalin.